Appendix A - Responsiveness Summary

Introduction

This responsiveness summary was prepared in accordance with the requirements of section 117 of CERCLA, as amended. The purpose of this section is to summarize and respond to public comments for the proposed plan for cleanup of the *Moses Lake Wellfield Contamination Superfund Site.*

Community Outreach and Involvement

A broad range of activities provided many opportunities for the public to be involved in the Moses Lake Wellfield Site under both the USACE work as well as under EPA. In 1999, the USACE established a Restoration Advisory Board to give advice on cleanup. In addition, the USACE canvassed the Skyline Area, talked with each resident, and offered bottled water service to all the affected homes within the area of groundwater contamination. In August 2007, EPA mailed 5000 postcards to residents and businesses in the 98837 zip code in or near the site notifying residents of the Superfund site cleanup proposal. EPA received 65 inquiries based on this mailing. In January 2008, the public notice was published in Columbia Basin Herald newspaper on release of the proposed plan, and a Fact Sheet describing the proposed action was sent to over 2000 people on our mailing list and major rural postal routes within and near the Institutional Control boundary. The public comment period was held from January 7, 2008, to March 7, 2008. Two public meetings were held during the comment period, an informal open house in January and a formal public meeting in February. No public comments where received at the public meeting.

Comments and Responses

Four sets of comments were provided: by the City of Moses Lake, Grant County, the Washington State Department of Health, and The Boeing Company. Their comments and EPA's responses are provided below.

City of Moses Lake Comments on EPA's January 2008 Proposed Plan

The City of Moses Lake (the "City") appreciates this opportunity to comment on EPA's Proposed Plan for the Moses Lake Wellfield Contamination Superfund Site (the "Site"). The City supports EPA's commitment to implementing active measures to restore groundwater at the site. The City's highest priority continues to be ensuring that the citizens of Moses Lake have a safe, reliable source of clean drinking water. To that end, the City is encouraged by RAO 3 of the Proposed Plan, which states that the remedy will "restore groundwater to meet federal drinking water standards and State cleanup standards."

The City also appreciates EPA's sustained efforts to move forward with selecting and implementing a remedy at the Site, and believes that it is important to get started with implementation. The City has submitted comments on earlier versions of the Proposed Plan, in the form of White Papers prepared by the City's consultant, D.B. Stephens & Associates, Inc.

Particularly relevant to the discussion in this letter are the fourth[1] and the fifth[2] White Papers, submitted on May 1, 2006 and May 15, 2006, respectively. The January 2008 version of the Proposed Plan is substantially different from previous versions on which the City commented, and many of the City's previous concerns have been addressed, so we are not requesting specific responses to our previous White Papers at this time. The City hopes that its remaining questions and concerns will be addressed in the Record of Decision, and provides this letter to outline the issues which we believe need additional clarification in the Record of Decision. We look forward to continuing to work with EPA on these issues.

The City's comments are outlined below, with additional detail on technical issues provided in the D.B. Stephens & Associates, Inc. submittal.

Introduction

The National Contingency Plan (NCP) sets forth nine specific evaluation criteria to facilitate evaluation of remedial cleanup alternatives at Superfund sites, establish the basis for the remedial selection decision, and demonstrate statutory compliance:[3] (1) overall protection of human health and the environment; (2) compliance with ARARs (Applicable or Relevant and Appropriate Regulations); (3) long-term effectiveness and permanence; (4) reduction of toxicity, mobility, and volume through treatment; (5) short-term effectiveness; (6) implementability; (7) cost; (8) state acceptance; and (9) community acceptance.[4] To be eligible for selection, as a threshold matter a remedial action must both: (1) protect human health and the environment; and (2) attain the ARARs, unless EPA waives adherence to the ARARs after making specific findings.[5]

The City's concerns about the Proposed Plan centers on two of the nine NCP criteria: (2) compliance with ARARs, and (6) implementability, particularly as it relates to institutional controls.

1. Applicable or Relevant and Appropriate Regulations

As you know, ARARs are "cleanup standards, standards of control and other substantive requirements, criteria or limitations promulgated under federal environmental or state environmental or facility siting laws."[6] "Applicable" requirements are those standards,

[1] White Paper No. 4: City of Moses Lake's Comments Regarding Implementability of EPA's Proposed Plan for the Moses Lake Wellfield Contamination Superfund Site (5/1/06).
[2] White Paper No. 5: City of Moses Lake's Comments Regarding Identification of and Compliance with ARARs for EPA's Proposed Plan for the Moses Lake Wellfield Contamination Superfund Site (5/15/06).
[3] EPA, *A Guide to Selecting Superfund Remedial* Actions, OSWER Directive 9355.0-27FS, at 1-2 (April 1990).
[4] 42 U.S.C. § 9621(a), -(b), -(d); 40 CFR § 300.430(e)(9). Criteria 1 and 2 are threshold criteria that all remedies must meet. 40 C.F.R. § 300.430(f)(1)(i)(A). Criteria 3 through 7 are "primary balancing criteria," allowing for trade-offs between them. 40 C.F.R. § 300.430(f)(1)(i)(B) & -(f)(1)(ii)(D)-(E). Criteria 8 and 9 are "modifying criteria" that the responding agency or PRP must consider, but which cannot justify departure from the threshold criteria. 40 C.F.R. § 300.430(f)(1)(i)(C) & -(f)(1)(ii)(E); *see generally* EPA, *A Guide to Selecting Superfund Remedial* Actions, OSWER Directive 9355.0-27FS, at 3 (April 1990).
[5] 42 U.S.C. § 9621(d); 40 CFR § 300.430(f)(1)(ii)(A)-(C).
[6] *Id.*; 40 C.F.R. § 300.5.

requirements, criteria or limitations that "specifically address a hazardous substance, pollutant, contaminant, remedial action, location or other circumstance" at the site.[7] In other words, an applicable requirement is one that a private party would have to comply with by law if the situation/action was not undertaken under CERCLA.

"Relevant and appropriate" requirements are those standards, requirements, criteria or limitations that are not applicable, but address situations sufficiently similar to those at the relevant site to justify their application.[8] While the determination of "applicability" is a legal one, the determination of "relevant and appropriate" relies on professional judgment, taking into account the circumstances of the site, the chemicals, the actions, and the location. A relevant and appropriate requirement should cover situations similar to those at the site (relevancy) and be suitable for the conditions at the site (appropriateness). Both conditions must exist in order for a requirement to be relevant and appropriate.

According to EPA,

> [i]t makes a difference whether a requirement is applicable or relevant and appropriate. The 'applicability' determination is a legal one, and it provides the Agency with very little flexibility. The 'relevant and appropriate' requirement is a site-specific determination, which provides the Agency with much greater flexibility since the Agency may determine that a requirement is not 'appropriate,' given site circumstances. (Therefore it would not be an ARAR for that site.) Waivers are also available if the requirement is relevant and appropriate but cannot be met for one of the reasons set out in CERCLA section 121(d)(4) (e.g., . . . attainment . . . is technically impracticable). In contrast, an applicable requirement, once triggered at a site, must simply be met or waived.[9]

We suggest that the Proposed Plan would benefit from a more extended discussion of ARARs and further clarification of which ARARs apply to which media at the Site, and in which geographic portions of the Site. There are two major areas of clarification related to the Washington Model Toxics Control Act, chapter 70.105D RCW ("MTCA"), which is an "applicable" requirement for the Site.

Residential/Industrial Cleanup Standards under MTCA

The State of Washington ("State") provided its preliminary identification of ARARs for the Site on February 16, 2007. On May 21, 2007 the State provided comments on an earlier version of the draft proposed plan, in which it stated that "[c]ontaminated areas outside of the Port of Moses Lake control may have residential access or unrestricted access, and would need to meet residential [cleanup] standards." However, the Proposed Plan does not address the State's

[7] 40 C.F.R. § 300.5; *Franklin County Convention Facilities Auth. v. Amer. Premier Underwriters, Inc.*, 240 F.3d 534 (6th Cir. 2001).
[8] 40 C.F.R. § 300.5.
[9] EPA, *ARARs Q's & A's: Compliance with New SDWA National Primary Drinking Water Regulations for Organic and Inorganic Chemicals*, Pub. No. 9234.2-15/FS (August 1991).

identification of residential cleanup standards. The City agrees that some areas of the Site are in industrial use, and will remain in such use; however, EPA should specify that residential standards apply to significant areas of the site which are currently zoned and used for residential (rural residential, subdivisions, apartments, and mobile home parks), commercial, agricultural, rangeland, irrigation, and recreation purposes. For areas that are not industrial, an industrial exposure does not apply and a cleanup to industrial levels would not comply with MTCA.[10]

The Proposed Plan identifies MTCA Method A industrial cleanup levels as an ARAR, rather than Method B and rather than residential cleanup levels. Under MTCA, unless a site qualifies for use of an industrial soil cleanup level, the residential soil cleanup level is presumed to apply and must be used.[11] To qualify as an industrial land use and an industrial soil cleanup level, the area of the site where industrial soil cleanup levels are proposed must meet the definition of an industrial property.[12]

"Industrial properties" are defined under MTCA regulations as follows:

> "Industrial properties" means properties that are or have been characterized by, or are to be committed to, traditional industrial uses such as processing or manufacturing of materials, marine terminal and transportation areas and facilities, fabrication, assembly, treatment, or distribution of manufactured products, or storage of bulk materials, that are either:
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> - Zoned for industrial use by a city or county conducting land use planning under chapter 36.70A RCW (Growth Management Act); or
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> - For counties not planning under chapter 36.70A RCW (Growth Management Act) and the cities within them, zoned for industrial use and adjacent to properties currently used or designated for industrial purposes.[13]

As stated above, only a portion of the Site qualifies as an industrial land use site under MTCA. The final remedy should distinguish between those areas (such as the airport) where the industrial standards will apply and those areas where residential standards will apply.

In addition, where industrial soil cleanup levels are used, the cleanup action must provide for institutional controls to limit exposure to residual hazardous substances, including, at a minimum, a restrictive covenant that limits the use of the property where such cleanup levels are

[10] WAC 173-340-702(3), (4) (cleanup standards and cleanup actions shall be established that provide conservative estimates of human health and environmental risks, protect human health and the environment for current and potential future site and resource uses).
[11] WAC 173-340-740(1) (a).
[12] WAC 173-340-745(1)(a)(i).
[13] WAC 173-340-200. See WAC 173-340-745 for additional criteria to determine if a land use not specifically listed in this definition would meet the requirement of "traditional industrial use" and for evaluating if a land use zoning category meets the requirement of being "zoned for industrial use."

used to industrial property uses only.[14] The Proposed Plan does not describe how this will be achieved for industrial properties, and should be clarified.

EPA Response: Each of the Sites identified as part of the soils component of the selected remedy is zoned industrial by the relevant local jurisdiction. Thus, each of these sites could be remediated to an industrial cleanup level under the Model Toxics Control Act. However, EPA, after consultation with the State of Washington, has determined that the appropriate cleanup level for Site 20 is a level that allows for unrestricted land use. The reason for this change is primarily due to the location of the site, the fact that it is currently in private ownership, and that this area has a high potential for mixed use. The ROD contains additional requirements regarding institutional controls.

The commenter has identified EPA guidance in this and other comments that it submitted. EPA's selection of remedies is governed by the requirements of CERCLA and the NCP regulations that implement CERCLA. EPA complied with these requirements in selecting a remedy in this ROD, including EPA's selection of institutional controls. EPA's guidance documents are expressly intended to provide guidance. EPA guidance does not, however, substitute for statutes that EPA administers through their implementing regulations. Guidance does not impose legally-binding requirements on EPA, States, or the regulated community, and may not apply to a particular situation based upon specific circumstances. EPA used guidance, as appropriate, to assist in selection of a remedy for the Site.

MTCA Groundwater Standards and Point of Compliance.

The Proposed Plan does not identify the MTCA groundwater cleanup standards as an ARAR. RAO 3 is "Restore groundwater to meet federal drinking water standards and State cleanup standards." However, the Proposed Plan identifies only two MTCA soil standards and the MCLs, which are federal standards as "the most significant" ARARs for the Site. The State identified MTCA groundwater standards as ARARs.[15] EPA should clarify both that the MTCA groundwater standards are ARARs and document how the remedy will comply with all facets of those standards.

EPA Response: The ARAR table cites MTCA groundwater cleanup standards (WAC 173-340-720).

MTCA cleanup standards have two components: hazardous substance concentrations that protect human health and the environment that must be achieved (the cleanup levels) and the location on the site where those cleanup levels must be attained (the points of compliance).[16] Setting cleanup standards also involves being able to demonstrate that they have been met, which in turn involves specifying where on the site the cleanup levels must be met (points of compliance), how long it takes for a site to meet cleanup levels (restoration time frame), and

[14] WAC 173-340-745(1) (a) (ii).
[15] Letter from B. Rogowski to D. Faulk dated Feb. 16, 2007 at 2.
[16] WAC 173-340-200.

conducting sufficient monitoring to demonstrate that the cleanup standards have been met and will continue to be met in the future.[17]

The State articulated Ecology's interpretation of MTCA cleanup regulations regarding point of compliance in the *City of Moses Lake v. United States* litigation:

> [A] cleanup *level* of 5 ppb TCE does not constitute the cleanup *standard* for TCE in groundwater at the Moses Lake Site because, at minimum, (1) it may not be the applicable cleanup level that protects both "human health and the environment," and (2) it does not include a geographic component, the "point of compliance," specifying where the cleanup level must be met at the Site. To determine what potential cleanup level (such as 5 ppb TCE) may be applicable, MTCA requires evaluating the various concentrations of a given contaminant (*e.g*. TCE or petroleum) in a given media (soil, groundwater, surface water, sediment, or air) that are necessary to protect both human health and the environment for various exposure pathways (*e.g*., exposure to humans through drinking contaminated groundwater, or exposure to a river ecosystem from contaminated groundwater entering the river). Although the entire range of such concentrations may be referred to in practice as "cleanup levels," only the most stringent concentration that is protective of both human health and the environment for all potential exposure pathways will be considered the applicable cleanup level under MTCA, and thus comprise a part of the applicable cleanup standard for that contaminant in that media. . . Second, even if 5 ppb TCE will be the applicable cleanup level, it is still not the cleanup standard for TCE in groundwater. At a minimum, the cleanup standard must also include a geographic component, the "point of compliance," defining where the cleanup level must be attained at the Site. To meet the TCE groundwater cleanup standard for this Site then, TCE will either need to be remediated to meet the applicable cleanup level throughout the entire contaminant plume in groundwater (under the "standard" point of compliance), or to meet the cleanup level at designated "compliance" wells at various locations within the groundwater (under a "conditional" point of compliance).[18]

In order to comply with MTCA, a cleanup action must be conducted to address all areas where the concentration of the hazardous substances in groundwater exceeds cleanup levels.[19] Where certain conditions are met, an area-wide conditional point of compliance may be approved to address an area-wide ground water contamination problem.[20] The area-wide conditional point(s) of compliance must be "as close as practicable to each source of hazardous substances, not to exceed the extent of ground water contamination at the time the department approves an area-wide conditional point of compliance."

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[17] WAC 173-340-700(7).
[18] Washington State Department of Ecology's Amicus Curiae Brief (Docket No. CV 04-0376-AAM), Document No. 388 (11/9/2006), at 6-7 [italics in original]; *see, also, City of Moses Lake v. United States*, 468 F. Supp.2d 1274, 1282-83 (E.D. Wash. 2006).
[19] WAC 173-340-720(1)(b).
[20] WAC 173-340-720(8)(d)(iii).

Area-wide conditional point(s) of compliance "may be applied only at areas that are affected by hazardous substances released from multiple sources that have resulted in commingled plumes of contaminated ground water that are not practicable to address separately" and only where the following conditions are met:

> (A) The person conducting the cleanup action has complied with WAC 173-340-350 through 173-340-390, including a demonstration that it is not practicable to meet a point of compliance throughout the ground water contamination within a reasonable restoration time frame;
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> (B) A plan has been developed for implementation of the cleanup action, including a description of how any necessary access to the affected properties will be obtained;
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> (C) If the contaminated ground water is considered to be potable under WAC 173-340-720(2), current developments in the area encompassed by the area-wide conditional point of compliance and any other areas potentially affected by the ground water contamination are served by a public water system that obtains its water from an offsite source and it can be demonstrated that the water system has sufficient capacity to serve future development in these areas. This demonstration may be made by obtaining a written statement to this effect from the water system operator;
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> (D) All property owners, tribes, local governments, and water purveyors with jurisdiction in the area potentially affected by the ground water contamination, have been mailed a notice of the proposal to establish an area-wide conditional point of compliance and provided an opportunity to comment. The notice shall specifically ask for information on existing and planned uses of the ground water. The notice shall be in addition to any notice provided under WAC 173-340-600. The department will give greater weight to information based on an adopted or pending plan or similar preexisting document. When the department is providing technical assistance under WAC 173-340-515, the department shall also provide an opportunity to comment to the public through the Site Register before issuing a written opinion.
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> (E) Other conditions as determined by the department on a case-by-case basis.[21]

The Proposed Plan does not make it clear how EPA will comply with these MTCA requirements. In order to demonstrate that MTCA cleanup standards will be met, EPA should set forth its bases for determining that the *ex situ* treatment proposed for the Roza 1 groundwater plumes will meet cleanup levels at the point of compliance within a reasonable restoration timeframe. Please see the attached technical comments for suggested revisions to the Plan that would demonstrate MTCA compliance. If EPA

[21] WAC 173-340-720(8)(d)(iii).

intends to apply an area-wide conditional point of compliance, it should provide an explanation of how the conditions above have been satisfied.

EPA Response: The goal of the cleanup action is to return all groundwater to its highest beneficial use throughout the plume area, and EPA does not foresee the need for an area-wide conditional point of compliance.

2. Institutional Controls

Institutional Controls ("ICs") are non-engineered instruments such as administrative and/or legal controls that minimize the potential for human exposure to contamination by limiting land or resource use.[22] According to EPA guidance,[23] all remedy decision documents should include a description of four key factors relating to IC determinations. The four factors include (1) the objective of the ICs; (2) the mechanism for implementing the ICs; (3) when the controls will be implemented; and (4) who is responsible for implementing, monitoring and enforcing the ICs.

The City has participated in EPA's workgroup with other local governments to analyze potential institutional controls for the Site, and appreciates EPA's efforts to develop a site-specific program. However, the City continues to be deeply concerned about the current nebulous state of the IC program. The Proposed Plan does not describe with any specificity the types of ICs EPA believes are necessary, does not identify the long-term funding mechanisms for implementing and enforcing ICs, and does not analyze anticipated future land uses at the Site. The absence of any description of ICs in the Plan makes it impossible for the public, the City, or any other local government that might be involved in implementing and enforcing ICs to evaluate and comment on the IC program at this time.

We are mindful of EPA guidance[24] that urges early and specific planning for ICs in order to avoid problems with remedial plan implementation:

> Another important early consideration is the need for a complete and realistic estimate of the long-term costs of ICs. Calculating the full life-cycle cost is an essential part of the IC planning process. This activity is important for several reasons. First, an accurate estimate of the full cost of ICs is necessary to compare the cost-effectiveness of remedies that rely on ICs to those that implement additional engineered measures to eliminate the need for ICs. Secondly, it is important to recognize that IC costs may extend well beyond the traditional cost calculation horizon of 30 years. These costs should be acknowledged when developing remedy estimates. Thirdly, accurate remedy cost estimates are essential for ensuring that agencies, governments, responsible parties and other organizations with the long-term responsibility for implementing, monitoring, and

[22] *Institutional Controls: A Site Manager's Guide to Identifying, Evaluating and Selecting Institutional Controls at Superfund and RCRA Corrective Action Cleanups*, OSWER 9355.0-74FS-P (September, 2000) ("IC Guide"), at 2.
[23] *Institutional Controls: A Guide to Implementing, Monitoring, and Enforcing Institutional Controls at Superfund, Brownfields, Federal Facilities, UST and RCRA Corrective Action Cleanups.*
[24] *Institutional Controls: A Guide to Implementing, Monitoring, and Enforcing Institutional Controls at Superfund, Brownfields, Federal Facilities, UST and RCRA Corrective Action Cleanups* at 3-7.

> enforcing the ICs know their financial liability prior to entering into settlements or other agreements obligating these requirements. . .
>
> As a general principle, site managers and site attorneys are encouraged to present information in decision documents that helps the public understand the impacts of the specific ICs and their relationship with the overall remedy, clearly describe the objectives to be attained, specify any required performance standards, discuss the kinds of controls envisioned and include enough information to show that effective implementation can be reasonably expected, discuss plans for monitoring and, where appropriate, discuss enforcement of the anticipated IC mechanism(s). Without specific information on the ICs, the site manager and site attorney may be unable to interpret the intent of the remedy selection document and the public may not fully understand the impacts of the ICs.

Here, the Proposed Plan does not make clear who will be doing what, nor does it analyze the cost of any ICs. EPA's guidance cautions that:

> Failure to involve local governments and communities can result in the delay of IC implementation or the selection of an IC that cannot be implemented for legal, administrative, or other reasons. It is important during the planning process for the site manager and site attorney determine the capability and willingness of the local government to implement and enforce the proposed ICs.

The City continues to be willing to work with EPA on this critical part of the remedy. The remedy must include a specific IC program which makes it clear who will implement it, and how such measures will affect individual landowners as well as local governments.

We also call your attention to Washington's Uniform Environmental Covenants Act (the "UECA"), which became effective July 22, 2007, after the State made its initial identification of ARARS. The UECA imposes both substantive and procedural obligations on the use of restrictive covenants as ICs that must be considered before a final remedy is selected. Before approving the land use or activity restrictions contained in a restrictive covenant, the UECA directs Ecology and/or EPA to consult with local land use planning authorities, and consider potential redevelopment and revitalization opportunities, obtain information regarding present and proposed land and resource uses, and consider applicable comprehensive land use plan and zoning provisions.[25]

The UECA also requires environmental covenants to meet certain formal requirements.[26] A covenant must, among other things, identify the nature of the limitations imposed by the covenant; identify the remediation action with which it is associated; and be signed by the agency with jurisdiction (Ecology or EPA), all grantees of the covenant, and the property owner. "Involving the community and local government early during the remedy decision process is

[25] SC 5421.PL § 5(5).
[26] SB 5421.PL § 5.

particularly important . . . where, for example, property owners other than just the owner of the property from where the contamination originated will be directly impacted by the proposed remedy."[27] It appears that private property owners outside the former Larson Air Force Base may be impacted by ICs, and we urge EPA to refine the IC program with the UECA in mind.

EPA Response: EPA appreciates the willingness of the City to work with EPA on the development of institutional controls for the Site. The selected remedy includes an institutional control component that complements the groundwater remedy and an institutional control component that complements the soil remedy. Both institutional control components are intended to ensure the continued effectiveness of the selected remedy by minimizing the potential for an unacceptable exposures to hazardous substances, pollutants, or contaminants that will remain at the Site during and/or after the remedial action is designed and implemented.

In regards to contaminated groundwater, EPA requires the implementation of institutional controls designed to prevent human consumption of TCE-contaminated groundwater during the period before treatment remedies or natural attenuation have remediated the plumes. Such Site-wide institutional controls will be in the form of administrative (governmental) efforts that ensure new or expanded drinking water systems or private wells do not inadvertently deliver TCE-contaminated groundwater to people or do not increase the size and depth of the existing groundwater plumes. The extent of such institutional controls will be confined to the Institutional Control Boundary depicted in Figure 1 of the ROD. Within this area, which encompasses City, County, and Port jurisdictions, EPA anticipates being able to successfully implement institutional controls in partnership with the City, County, and the Port. Land development, permitting, and enforcement may be most effectively implemented at a local government level. As the commenter notes, EPA has and is continuing to work with the local government to implement an effective institutional control program for groundwater. This program will be funded by appropriate sources and will involve sampling new wells drilled within the Institutional Control Boundary for TCE as part of the potable water suitability determination. EPA will ensure that local governments and citizens do not pay for the cost of this program. If TCE is found above, at, or near the drinking water standard of 5 ug/L, then EPA will install a filter to allow for domestic use.

In regards to soil sites that do not result in a remedial action that provides for unrestricted land use, EPA will require that easements and restrictive covenants be recorded in the local government office that records deeds so that the particular site may not be used in a manner that is inconsistent with the level of cleanup that is achieved by the implemented remedy and will not interfere with the continued effectiveness of the implemented remedy. It is likely that these easements and restrictive covenants will be consistent with the Uniform Environmental Covenants Act.

[27] *Id.*

3. Implementability.

The Proposed Plan concludes that the preferred alternative remedy is implementable. However, without specifying the elements and costs of the ICs component of the remedy and verifying that local governments and property owners are willing and able to implement such components, it is premature to make such a determination. The City urges EPA to eliminate this major uncertainty before proceeding with final remedy selection.

In addition, the Proposed Plan contemplates an iterative treatment and source removal program, and identifies several areas on the site where additional investigation may show a need for additional remedial measures. The cost estimates for implementation should include a significant contingency to deal with these issues, and those costs should be considered and analyzed as part of EPA's implementability determination.

EPA Response: See response above related to ICs. The estimated cost of the selected remedy is $37,000,000. Consistent with EPA RI/FS guidance, the accuracy of this cost estimate is minus 30 to plus 50 percent. The cost estimate does account for contingency. In particular, a conservative estimate of up to 10 percent of each source area would require removal. Contingency is also built in to the cost estimate to allow for pumping in the lower basalt aquifers if required.

1. Overview

On behalf of the City of Moses Lake (the City), Daniel B. Stephens & Associates, Inc. (DBS&A) presents the following comments on the U.S. Environmental Protection Agency's (EPA's) *Proposed Plan for the Moses Lake Wellfield Contamination Superfund Site* (Proposed Plan) (U.S. EPA, 2008).

Trichloroethene (TCE) was discovered in three of the City's water supply wells nearly 20 years ago. Since that time, the City has expended considerable resources to ensure that it can provide its citizens with an uninterrupted supply of clean water. In order to continue to ensure such a supply, the aquifers affected by TCE contamination emanating from the former Larson Air Force Base must be restored to full beneficial use as soon as possible. The City believes that in order to remediate TCE-impacted groundwater in a reasonable timeframe, it is of paramount importance to locate, properly characterize, and remediate the sources that are causing the groundwater contamination.

2. Review of the Proposed Plan

The Proposed Plan issued by EPA on January 7, 2008, is a significantly better plan than the initial draft provided to the City in early 2006. First and foremost, the current plan requires groundwater restoration so that TCE concentrations are below the drinking water standard of 5 micrograms per liter (µg/L). EPA plans to achieve this objective as follows:

1. Active treatment of the higher concentration inner portions of the South Plume and the Main Plume in the uppermost basalt aquifer (Priest Rapids/Roza 1). EPA believes that

natural attenuation (through dilution) will clean up the lower concentration areas along the edges of the plumes, but adds that if this does not happen at "an acceptable rate", **additional wells "may" be added** to treat more of the aquifer.

2. EPA is hopeful that treatment of the Main Plume will reduce TCE concentrations in the smaller Northeast Plume. If this does not occur and additional monitoring indicates a need for action, **additional extraction wells will be installed** in this plume.

3. EPA is also hopeful that treatment of the uppermost basalt aquifer will cut off contaminants moving to the deeper aquifers and that TCE concentrations in the Roza 2 will begin to decline as a result. However, if the levels of TCE contamination in the Roza 2 are similar to those observed in the Priest Rapids/Roza 1, "then **additional pumping wells will be installed** in the Roza 2 aquifer".

4. EPA also proposes long-term groundwater monitoring. One purpose of this monitoring is to determine whether TCE contamination is limited to the currently identified plume boundaries. If the Roza 3 is found to be contaminated or becomes contaminated in the future, "additional cleanup actions in the Roza 2 or Roza 3 aquifer **may** be warranted."

EPA proposes additional investigations of a number of areas that appear to be contributing TCE to groundwater and will install additional monitoring wells in "key aquifer locations" and to "further define the extent of contamination in the Roza 1, Roza 2, and Roza 3 basalts".

3. General Concerns

The City has identified areas of uncertainty related to the groundwater aquifers and its water supply based on the results of the remedial investigation (RI) conducted by EPA:

1. It does not appear that EPA has sufficient information to determine whether many of the potential source areas (PSAs) pose a risk to human health, whether releases from those PSAs have resulted in impacts to groundwater, or whether releases from those PSAs continue to impact groundwater. The remedial investigation of the site has focused on shallow soil and groundwater, with limited investigation of the deep unsaturated zone. The U.S. Army Corps of Engineers (USACE) acknowledges that the "low density of data on the vadose zone could be perceived as a general data gap" (USACE, 2004). Failure to properly characterize the entire vadose zone could lead to unidentified sources remaining in the vadose zone. If unidentified sources are contributing contaminants to groundwater, the groundwater remedy will not restore groundwater in a reasonable timeframe leading to a reduction in the long-term effectiveness and permanence of the proposed remedy.

   According to the Proposed Plan, "[t]welve sites (both inside and outside the airport) will require further characterization and removal of hazardous constituents if found". EPA states that "the sites will be investigated using a combination of soil gas survey techniques coupled with extensive test pitting and soil sampling.". EPA also states that

"as wells are drilled, soil samples and soil gas samples will be taken to ascertain whether the vadose zone is a continuing source." Please confirm that groundwater monitoring wells or possibly combination multi-port soil gas/groundwater monitoring wells will be installed at each of the 12 areas proposed for additional investigation.

EPA Response: The sampling and analysis plan that will be developed as part of the remedial design will provide the specifics on locations and sampling protocols. A number of new monitoring wells will be installed, many near potential source areas. In addition, as wells are drilled they will be screened for organic vapors particularly in the deep vadose zone to look for significant source term. EPA will seek the City's comments on the locations selected for further characterization and monitoring.

2. There are three partially-defined TCE groundwater plumes, designated as the South, Main, and Northeast Plumes. These three plumes affect the shallowest basalt aquifer known as the Priest Rapids/Roza 1 aquifer. Limited investigation demonstrates that TCE also affects the underlying Roza 2 aquifer beneath the South and Main Plumes. The Roza 2 aquifer within the footprint of the Northeast Plume has not been tested. There has also been no testing of the Roza 3 aquifer, which underlies the Roza 2 and is closer to the zone from which the City obtains its water supply. The presence of TCE in the Roza 2 indicates a significant threat to the City's water supply.

   The Proposed Plan indicates that additional investigation will be conducted to evaluate the extent of impacts to the Roza 2 and potential impacts to the Roza 3. Please confirm that a sufficient number of wells will be installed to determine the groundwater flow patterns and extent of TCE impacts in the Roza 2. If the Roza 3 is found to be impacted with TCE, what steps will be taken to ensure that the City's water supply wells do not become impacted?

EPA Response: See response above regarding additional investigations. If characterization shows that the Roza 3 is impacted such that a threat exists to groundwater users, including the City, the pump and treat component of the selected remedy will be expanded to address groundwater contamination in Roza 3.

3. TCE has been detected in a number of groundwater monitoring wells outside the South, Main, and Northeast Plumes that have caused EPA to extend the area encompassed by the 0.5 µg/L contour (refer to Figure 1 with the Proposed Plan). While the TCE concentrations in these wells are below the level that requires EPA action, these wells are relatively few in number and generally not ideally positioned in relation to the PSAs. It is quite likely that higher TCE concentrations exist in these areas; because no remedial action is contemplated in these areas, they pose a long-term risk to the City's water supply.

   The Proposed Plan indicates that additional monitoring wells will be installed in these areas to further define the extent of contamination. Please confirm that wells for long-

term groundwater monitoring will be installed in the area north of the Main Plume (in the vicinity of basalt well 00BW07) and west of the Main Plume (in the vicinity of basalt wells 99BW16 and 00BW11).

EPA Response: The areas described above will be locations where additional wells are installed.

4. TCE has consistently been detected in the alluvial aquifer on the northwest side of the site at well 99AW10. There has been no investigation of the basalt aquifers in this portion of the site. This information is of serious concern because, as noted in the Proposed Plan, the alluvial aquifer does not generally display much TCE, even in the footprint of the South and Main Plumes. The presence of persistent TCE in the alluvial aquifer could indicate significant impacts to the basalt aquifers in this area and poses a long-term risk to the City's water supply.

   The Proposed Plan indicates that additional investigation will be conducted in this area, including the installation of additional monitoring wells. Please confirm that groundwater monitoring wells will be installed in the Priest Rapids/Roza 1 aquifer around alluvial monitoring well 99AW10.

Response: Additional wells will be installed in the Roza 1 near well 99AW10.

4. Specific Comments

4.1 Hydrostratigraphic Setting

Page 4: "The aquifers relevant to the Study Area are: 1) Hanford formation; 2) Priest Rapids and flow-top of Roza 1; 3) Roza 2 flow-top; and 4) Roza 3."

It would be appropriate to note in this paragraph that investigation has been limited to the upper 3 aquifers, that TCE has been detected in each of these aquifers, and that the Roza 3 has not been investigated. The City also considers the aquifers from which the City obtains its water supply to be relevant. As illustrated by Figure 1 (attached), contamination in the South Plume has been detected about 120 feet above the zone from which the City draws its water at well ML-24.
Page 4: "Vertical groundwater flow is generally downward between all the units, and apparently some leakage of water (and contaminants where present) can occur naturally through the Ringold Formation and at least the first few dense basalt flow interiors."
On page 43 of the Draft Groundwater Feasibility Study dated August 2005, the USACE states that dissolved TCE might move through the dense interior of the Roza 1 into the Roza 2 aquifer in as little as 12 days (this sentence was deleted from the 2007 revised GWFS). The limited investigation of the Roza 2 found TCE in each of the eight areas tested. Once again, there has been no investigation of the Roza 3, but it is reasonable to expect that it too has been contaminated with TCE.

Page 6, Paragraph 4: The last sentence "In addition, TCE may have moved deeper into the vadose zone and has the potential to continue to contaminate the groundwater." should be moved to the end of Paragraph 3.

EPA Response: EPA does not intend to revise the proposed plan. However, the interim ROD does acknowledge and require wells to be installed into the Roza 3 aquifer.

4.2 ***Summary of Site Risks***

*Page 8, Potential Source Areas Inside the Airport: "information on these sites is limited, and additional investigations **should** be performed as these sites have the highest probability of containing TCE or other contamination. If contaminants are found above health-based levels or at levels which may continue to contaminate groundwater, they will be removed."* (emphasis added)

The recommended remedy for these sites, includes additional characterization, removal of contaminants, institutional controls, and long-term monitoring. The word "should" in the sentence above should be changed to "will."

EPA Response: The interim ROD requires additional investigations at all 12 potential source areas.

4.3 Summary of Other Risks

Page 12: "[T]he following discarded military munitions were found: empty small-arms shells; scrap from a 5-inch rocket warhead for pyrotechnic flares; crushed 100-pound AN-M47 series fire bombs; fins, fuses; Navy Rocket 2.25; and 5-inch rocket motors."

Pyrotechnic flares and rockets often contain high percentages of perchlorate salts. This information indicates that the former military landfills are potential sources of perchlorate. Please clarify what steps will be taken to characterize the landfills as potential perchlorate sources.

EPA Response: The cleanup approach in source areas will use the observational approach. The intent is to use a backhoe to sort through the debris in landfill areas. If munitions are encountered, they will be handled appropriately and the underlying soils will be sampled for contaminants of concern.

4.4 Applicable or Relevant and Appropriate Requirements

Page 13. "For groundwater: MCLs for TCE"

Please see the City's general comment letter for a discussion of our other concerns related to ARARs and the full integration of MTCA requirements into the remedy. From a technical standpoint, the City is most concerned about the point of compliance for groundwater cleanup and restoration time frame.

Point of Compliance: EPA is proposing to remediate groundwater at the Site to a cleanup standard of 5 µg/L, the MCL for TCE, but does not specifically address the point of compliance. According to MTCA, the point of compliance means "the point or points where cleanup levels established in accordance with WAC 173-340-720 through 173-340-760 shall be attained (WAC 173-340-200). Furthermore, "[t]he standard point of compliance shall be established throughout the site from the uppermost level of the saturated zone extending vertically to the lowest most depth which could potentially be affected by the site" [WAC 173-340-720 (8)(b)]. In other words, the standard point of compliance covers all aquifers everywhere within the Site, including the Northeast Plume. The remedial action objective (RAO) 3 established by EPA is to "[r]estore groundwater to meet federal drinking water standards and State cleanup standards." EPA does not limit groundwater restoration to a portion of the site.

Restoration Time Frame: EPA does not state how long it expects the cleanup will take. A reasonable restoration time frame is a key component in evaluating the long-term effectiveness and permanence of the remedy. MTCA establishes the need to achieve cleanup goals within a reasonable time frame [WAC 173-340-360(2)(b)(ii)]. We have overlaid the extraction/reinjection system layouts and the outermost boundaries capture zones for the South Plume (Figure 2 attached) and the Main Plume (Figure 3 attached) from the conceptual design report (GeoTrans, 2007) onto an aerial photograph base that shows the potential source areas (PSAs) and the TCE plumes (Figure 4 attached). The conceptual design includes extraction wells downgradient of the source area, and a treatment system and injection wells near the head of the plume. Contaminated groundwater would be removed at the extraction wells, pumped to the treatment system at the head of the plume, treated, and reinjected into the aquifer to flush the contaminated zone.

The tick marks on various flow paths on Figure 2 (the South Plume) and Figure 3 (the Main Plume) show the distance groundwater will travel in a two-year period. Based on the tick marks on Figure 2, it appears that it will take between 10 years (on the innermost flow path) and 28 years (on the outermost flow path) for one "pore volume" of contaminated groundwater to pass through the system. The conceptual design report (GeoTrans, 2007) estimates that four pore volumes of water will need to be flushed through the contaminated zone to reach the cleanup goal of 5 µg/L. Therefore, using the conceptual design tested, the South Plume will require about 112 years to achieve the cleanup goal for the part of the plume with concentrations of 20 µg/L or higher, which corresponds to the outermost flow path from the conceptual design (Figure 2). On the other hand, Figure 3 indicates that one pore volume will flush through the Main Plume area in 6 to 10 years and it will take approximately 40 years to achieve the cleanup goal for the part of the plume with concentrations of 20 µg/L or higher, which corresponds to the outermost flow path for the conceptual design (Figure 3).

To clarify these issues, EPA should:

1. Acknowledge that MTCA, including WAC, Chapter 173-340 (Cleanup) is an ARAR.

2. Revise RAO 3 to read as follows: "Restore groundwater throughout the Site to meet federal drinking water standards and state cleanup standards within a reasonable restoration time frame."

3. Adopt a more aggressive pump and treat strategy that will achieve the cleanup goal of 5 µg/L TCE within a reasonable time frame, such as 30 years, which the City considers to be reasonable.

EPA Response: See response to the City's earlier comment. Please note the work performed by GeoTrans is conceptual. The actual system design will occur as part of the remedial design process. Also restoration timeframes are difficult to determine. The stated goal in the interim ROD is to attain the MCL for TCE within a 30-year timeframe. Performance monitoring will occur throughout the life of the cleanup and, if the aquifer is not responding as predicted, additional measured will be implemented.

The Proposed Plan does not identify any ARARs that EPA is contemplating waiving. Proposed ARAR waivers must be discussed pursuant to NCP §300.430(f)(2)(iv). Does EPA contemplate waiving any ARARs?

EPA Response: No ARAR waivers are being sought.

4.5 Potential Source Areas (Soils), Comparison of Alternatives 2 and 3

Page 17, paragraph 7: "Costs for alternative 3 are based on the assumption that 10 percent of the landfill volume would need to be removed to meet cleanup standards."
What steps will EPA take if more than 10 percent of the landfill volume would need to be removed to meet cleanup standards?

EPA Response: Source removal will continue in source areas until cleanup levels are met. The use of the 10 percent estimate for landfill removal is for planning purposes; actual material removal will vary from site to site and will depend upon the volume and levels of contamination encountered during remedial action.

4.6 Evaluation and Comparison of Alternatives for TCE Groundwater Plumes

Page 21, paragraph 2. Long-term Effectiveness and Permanence.
This paragraph should include an estimate of restoration time frame (refer to previous comments).

Page 22, paragraph 2: "as wells are drilled, soil samples and soil gas samples will be taken to ascertain whether the vadose zone is a continuing source."

We concur with the proposal to collect deep soil gas samples. In our experience, active and passive soil gas measurements are more sensitive to detecting chlorinated solvents than soil matrix measurements, particularly in coarse soil such as that found at the site. Due to the coarse soil texture and low moisture content, TCE is much more readily detectable in the vapor phase than in the soil matrix.

Page 22, paragraph 4: EPA believes that natural attenuation (through dilution) will clean up the lower concentration areas along the edges of the plumes, but adds, "[i]f attenuation of the outer portions of a plume is not occurring at an acceptable rate, additional wells may be added to treat more of the aquifer."

The City is concerned about the use of the word "may". As illustrated by the conceptual extraction/reinjection system designs (Figures 2 and 3), reinjected treated groundwater will flush and dilute lower concentrations near the upper end of the plumes. However, dilution at the lower end of the plume will likely occur much more slowly. Please clarify what steps will be taken to clean up the lower concentration areas along the edges of the plumes if concentrations do not show a significant decline to indicate that the cleanup standard will be met through natural attenuation in a reasonable time frame.

EPA Response: EPA expects that natural attenuation (through dilution) will clean up lower concentration areas along the edges of the plumes. However, if the expected natural attenuation does not occur, EPA will evaluate whether additional actions are necessary to address TCE-contaminated groundwater. At this point in the process it is difficult to specify what actions will be taken if the edges of the plume do not show attenuation; however as discussed in the Proposed Plan, EPA will consider the placement of additional pumping wells to treat a larger area of the plume. As discussed earlier, the performance of the system will be monitored and adjustments made as needed to achieve RAOs.

4.7 Site-Wide Remedial Elements of All Alternatives

Page 24, paragraph 3, Engineering Controls. "EPA recommends the implementation of engineering controls designed to remove TCE from groundwater with TCE concentrations exceeding 5 ug/L used by City, community, or residential (less than five connections) drinking water supply wells."
The maximum contaminant level for TCE in drinking water is 5 µg/L. The word "exceeding" should be replaced with "at or above". The same change should be made in the last sentence of this paragraph.

EPA Response: The ROD has corrected this language.

Page 24, paragraph 4, Asbestos Monitoring and Abatement. "based on the history of the former Larson AFB and EPA's knowledge of similar private-sector and military sites, there is a high probability that asbestos has been disposed in one or more of these landfill areas."

Given the "high probability" of the presence of asbestos in the landfills and EPA's plans to conduct additional investigations in the landfills, what response actions will EPA take if significant asbestos is discovered during the investigations?

EPA Response: If friable asbestos is encountered during cleanup of the source areas, it will be removed and packaged for appropriate offsite disposal. The on-site actions will comply with the identified ARARs.

Grant County Comments on EPA's January 2008 Proposed Plan

Dear Mr. Faulk:

Grant County (the County) appreciates this opportunity to comment on EPA's proposed plan for the Moses Lake Wellfield Contamination Superfund Site (the Site.) The County's role at the Site is limited. It is not a Potentially Responsible Party (PRP) and we have not been closely following the details of the investigations or water supply replacement activities at the Site. The County's comments are limited as well, focusing primarily on the institutional controls program included in the proposed plan.

Before describing the County's concerns about the institutional control program summarized in the proposed plan, we observe that County residents expect and are entitled to safe drinking water. The County supports the selection of the third Remedial Action Objective, "Restore groundwater to meet federal drinking water standards and State cleanup standards." The County urges EPA to move expeditiously to select a remedy and begin the important work of groundwater quality restoration. This letter does not address specific aspects of the active remediation parts of the proposed plan: excavation of contaminated materials and extraction and treatment of contaminated groundwater, leaving those comments to others.

The proposed plan relies upon institutional controls to limit the risk of human exposure to TCE-contaminated groundwater within the "Institutional Control Boundary" area. This is a 1,000 acre area that lies within multiple jurisdictions including the Port of Moses Lake, the City of Moses Lake, and unincorporated Grant County. EPA recently invited the County, the local Health District, the State of Washington, the City of Moses Lake and the Port of Moses Lake, to discuss development and implementation of an institutional controls program. The County has participated in a number of meetings discussing a possible institutional controls program.

At this point, the County remains unconvinced that an institutional controls program is appropriate or necessary at the Site. Specifically, it appears that an alternative water supply can feasibly and practicably be provided within the Grant County portion of the institutional controls area.

It is our understanding that the City of Moses Lake water supply system extends in relatively close proximity to the Institutional Controls area on more than one side. Moreover, we understand that the City of Moses Lake has provided planning and other cost information to EPA. To date, we have seen no assessment of the feasibility of extending the system and only a

general estimate of the cost of extending the water supply system within the affected area. This information is a critical part of the County's decision-making process, and without it, the County cannot embark upon the regulatory process EPA has suggested.

We also understand that EPA provided an alternate water supply system in the Skyline area of the site, that public acceptance of that system was an issue, and that it may be an issue in this area as well. However, until the options are fully developed and described for the public, and the public's input sought, we cannot assess that possibility. It is important to note that the time frame for returning the groundwater to drinking water use is very long, perhaps one hundred years. Institutional controls would have to be in place for all of that time, and County residents should be informed that there could be limits on the uses of their property for all of that time.

We understand that fact sheets have been issued and public meetings held, and acknowledge EPA's efforts. We believe that additional effort must be made to ascertain public opinion and the likely acceptance of the various options, and request that EPA make that effort. Until the options are fully developed, and public opinion gathered and understood, we do not believe it is in the interest of the Grant County residents for the County to consider additional limitations on building permits within the Institutional Controls area.

Should our questions about the extension of the existing water supply system into the Institutional Controls area be answered, we will ask our representatives to participate in further discussions about and institutional controls program.

EPA Response: The City has provided estimated costs to extend water service to new connections that we shared with you at our meeting on May 13, 2008. In summary, the cost for installation of a new water main line is approximately $422.000.00 for each mile of pipe installed and approximately $4,000.00 to connect to each home. Given the size of the area, and based upon the cost information provided by the City, the estimated cost of providing water service falls within a range of $5 to $15 million dollars. The cost of extending the water service would be in addition to the cost of implementing the selected remedy for TCE contaminated groundwater. EPA believes that the selected remedy for addressing contaminated groundwater, including the institutional controls component, provides a level of protection that is equal to the level of protection provided by extending the water service system. The federal government will continue to test domestic wells inside the IC boundry to ensure protection. As new wells are installed, they will be sampled by the government and then be added to the ongoing monitoring program. If contamination is detected at or near the MCL, then whole-house water filters will be provided at no cost to the homeowner. It is envisioned that as the pump and treat system develops and plume control is established, the IC area boundary outlined in the ROD will shrink.

In regard to public notifications, extensive public outreach has occurred and is described in the introduction to this responsiveness summary.

Proposed Plan for the Moses Lake Wellfield Contamination Superfund Site
Department of Health Comments
March 2008

Thank your for the opportunity to comment on your proposed plan for the Moses Lake Wellfield Contamination Superfund Site. It is encouraging to see that the Environmental Protection Agency (EPA) will be moving forward on remediation of the groundwater contamination problem in this area.

Our one general comment is described below. Several additional comments of a more detailed nature are included in the enclosure.

Our general comment is that EPA's proposal should clarify the extent to which drinking water supplies derived from the affected aquifer will be monitored and, if necessary, treated. Specifically, we suggest the proposal

- Describe how individuals with potable water supply wells developed in the affected aquifer can seek reimbursement from EPA for the cost of trichloroethylene (TCE) monitoring.

- Describe how individuals with potable wells determined to exceed the TCE maximum contaminant level in drinking water (5 parts per billion) can seek redress, remediation, and/or alternate sources of safe drinking water until the aquifer clean up is successfully completed.

- Describe how EPA will verify that the TCE problem has been successfully remediated.

EPA Response: As part of the selected remedy, EPA will implement a robust monitoring program that will continue to test existing drinking water wells for TCE contamination. This program will include testing existing drinking water wells that have not been tested to date. In addition, the institutional control program will provide for the testing of new wells installed within the IC boundary. If contamination is present at or near the MCL, then the government will install and maintain a filter system on the affected well. EPA will ensure that the costs implementing the institutional control program for groundwater will not be borne by either local government or local citizens. Instead, EPA will obtain funding from the appropriate source with an emphasis on seeking funds from those parties that are responsible for contamination at the Site.

The criteria for successful remediation have been defined as when the contamination in the groundwater is below 5 ug/L TCE throughout the entire plume area. This determination will be based upon monitoring that will be continued to evaluate the effectiveness of the selected remedy and will be developed and adaptively managed during remedial design and remedial action.

Specific comments:

Page 19, Public Education/Notification: The first bulleted item under implementability states that the public must be made aware of the potential risks of withdrawing groundwater within an area of concern, through an education/notification program. The Department of Health agrees. However, it is not clear how this will be done or if the Environmental Protection Agency is aware of how many public water systems there are within the area of concern. So, a table listing all public water systems in our database, and within the groundwater institutional control area, is included at the end of these comments.

EPA Response: Thank you for including the table.

Page 22, Alternative 4-In-Situ Groundwater Treatment: The second sentence in the second paragraph states that as wells are drilled, soil samples and soil gas samples will be taken to ascertain whether the vadose zone is a continuing source (of TCE). Clarify if this a service EPA will provide for wells drilled for new public or private water systems. If so, please provide more details on how well drillers will be informed of this service.

EPA Response: The vadose zone sampling is limited to the new characterization and monitoring wells that are installed as part of the remedy and does not apply to new public or private wells.

Page 24, Engineering Controls: The last sentence in this section states that EPA proposes replacing any well with TCE concentrations exceeding 5 ppb with a deeper, uncontaminated well. Please clarify if EPA will provide this service only within the Northeast Groundwater Plume, Upper Basalt, Priest Rapids/Roza 1. There are existing public water systems within or near the south plume. So, if EPA will only replace contaminated wells within the northeast plume, please explain that policy in the proposed plan.

EPA Response: The intent of this language is to require replacement of any of the City's wells that show contaminant concentrations above 5 ug/L TCE.

Comments from The Boeing Company on EPA's January 2008 Proposed Plan

The Site Background provides irrelevant and potentially misleading details about Boeing's operations, which are unrelated to the remediation of groundwater contamination. For example, the Proposed Plan states that Boeing established a flight center in 1954, that Boeing closed its operations in about 1960, and that "Boeing returned to the Airport by purchasing 130 acres, including the three-place hangar" in 1968. There is no reason for including this information in the Plan, and a discussion of Boeing's operations at its Moses Lake Flight Center may be incorrectly construed as an indication that Boeing's operations are responsible, in part, for TCE groundwater contamination. There is no evidence of this. In fact, the Plan identifies Boeing's facility as an area requiring no further action. The Plan calls for no additional sampling of Boeing property because that property has been fully characterized. The EPA has identified many other PRPs for the Site, including other defense contractors and historical industries in the

area of the Site. The Plan, however, does not describe the historical operations of those other PRPs because, just like Boeing, there is no evidence tying their activities to the Site's TCE groundwater contamination plume. References to Boeing's historical operations at the Moses Lake Flight Center, which appear on page 2 of the Plan, should therefore by removed from the Plan.

In addition to including superfluous information about Boeing's operations, the Site Background fails to provide information that is essential for a reader to understand the relationship of groundwater contamination to historical operations and the areas where sources of TCE have been discovered or are suspected. A discussion of the history and operation of the potential source areas, including the former base dumps, was rack and fire training pits that were owned and operated by the U.S. Air Force and the wastewater treatment facility that served the base, would be beneficial and should be included in the Plan.

EPA Response: EPA is surprised by Boeing's comments on this subject. A draft proposed plan was shared early in the process with Boeing and no comments were made on the draft. The proposed plan has been through public comment and no revisions will be made.

The map attached in Figure 1 to the Proposed Plan should be revised. Included in Figure 1 are "TCE Concentration" groundwater contour lines, which purport to indicate the locations of TCE in groundwater. The 0.5 to 5.0 ug/l groundwater contour line for TCE extends around Boeing's facility (the 3-place hangar (Area 17) and surrounding tarmac and yard areas). There is no factual basis in the historical record or in the groundwater or soil gas sampling results for including Boeing property within this TCE concentration contour line. Neither the City of Moses Lake's municipal water supply well, which is located on Boeing property within the contour line, nor any Boeing groundwater monitoring well has ever detected any TCE in groundwater in, on, or under Boeing property. Based on the lack of soil or groundwater contamination present within this portion of the site, the contour line should be re-drawn to exclude Boeing property (PSA 17).

EPA Response: The contour lines are intended to be a general conceptualization. As additional monitoring wells are drilled and the plumes are better defined maps will be revised as needed.

Public Water Systems Within Groundwater Institutional Control Area

Public Water System	Type	Well Location	PWSID#
Moses Lake Irrigation and Rehabilitation District	Group A TNC	NW1/4, NE1/4, section 31-T20N-R28E	56303F
Cascade Village MHP	Group A Community	SE1/4, SE1/4, section 8-T19N-R28E	11488T
Hillcrest Water Users Assoc	Group A Community	SE1/4, SW1/4, section 9-T19N-R28E	33200J
Lakeview Mobile Terrace	Group A Community	NW1/4, SW1/4, section 9-T19N-R28E	453124
Ponderosa Mobile Home Park	Group A Community	NW1/4, SW1/4, section 9-T19N-R28E	68420Q
Skyline Water System	Group A Community	SW1/4, NE1/4, section 9-T19N-R28E	80210R
Basin Water Sources	Group A Community	SE1/4, SW1/4, section 10-T19N-R28E	46001
Grant County Fairgrounds	Group A TNC	NW1/4, NE1/4, section 16-T19N-R28E	29069U
Evergreen Mobile Home Park	Group B	SW1/4, SE1/4, section 4-T19N-R28E	24085Y

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